Digestive and Liver Disease 51 (2019) 1–3

Contents lists available at ScienceDirect

Digestive and Liver Disease

journal homepage: www.elsevier.com/locate/dld

Review Article

The burden of digestive disease across Europe: Facts and policies

Neil O'Morain, Colm O'Morain*

Department of Gastroenterology & Clinical Medicine, Tallaght University Hospital/Trinity College, Dublin 24, Ireland

ARTICLE INFO

Article history:
Received 11 August 2018
Accepted 3 October 2018
Available online 12 October 2018

Keywords:
Access to healthcare
Incidence of GI disease
Research funding
Screening
Training

ABSTRACT

The past decade has witnessed a significant increase in the incidence of GI diseases across Europe. There are clear differences in outcomes for patients in Europe based on geographical and economic differences, and there is a worrying inequality in the provision of healthcare across the continent. Recent demographic studies have highlighted the heavy burden of GI disease across Europe. There is increasing demand for endoscopic procedures which are becoming increasingly more complex and demand further expertise and training. A co-ordinated and cohesive approach to research, specialist training and healthcare funding is required to overcome these inequalities.

1. Introduction

Gastroenterology, as a specialty, is under represented and under appreciated by hospital management and research institutions. There has been a widespread increase in the incidence of digestive diseases throughout Europe over the past decade; without corresponding increases in resources; personnel or bed capacity. There are clear differences in outcomes for patients in Europe based on geographical and economic differences; and there is a worrying inequality in the provision of healthcare across the continent

The United European Gastroenterology (UEG) was created to promote Gastroenterology as a major specialty across Europe and further afield. They succeed in doing this by being a united voice for Gastroenterology, as it represents 16 pan-European societies of Gastroenterology and 44 National societies. The UEG has a public affairs and research committee, which aims to improve representation at European level, to promote the importance of digestive health to European citizens and to lobby for a fair share of research funding.

Specialist doctors need to be trained to a very high standard, and their career pathways need to be better defined ensuring them a secure and satisfying profession. Training in the digestive diseases requires increasingly specialised training pathways, reflecting the increasing complexity of the specialty and sub-divisions that exist including advanced Hepatology, therapeutic endoscopy and Luminal disease. There is an increasing recognition that specialised care of digestive disease results in better patient outcomes. This needs to be further championed and promoted throughout Europe.

2. Biomed Alliance for health research in Europe

The UEG is an integral member of the Biomed Alliance for health research [1] in Europe. The alliance was created 8 years ago to represent and lobby for translational medicine within the European Commission (EC) and the European Parliament (EP). It has 29 pan-European learned member societies, and has identified common goals amongst its members. The Alliance has made concrete proposals for the next framework soon to be launched by the EC for research. It has developed a code of conduct on how the member societies conduct their major scientific meetings. It has created a taskforce to on investigator led clinical trials, the necessity of animals in research, and continuing medical education. It represents a strong unified voice at European level, as the alliance represents the view of over 400,000 translational medical researchers.

3. United European Gastroenterology

The UEG research board commissioned a survey of digestive health across Europe [2], in order to get up-to-date information on the true burden of digestive diseases and the current organisation of health care delivery across Europe today. The aim was to raise political awareness, and to inform policy makers of the true burden of digestive diseases. There is convincing data to show that digestive diseases are increasing in both incidence and prevalence. The highest rates of increase are reported in Eastern European countries and in less affluent parts of Western Europe.

* Corresponding author.
E-mail address: colmomorain@gmail.com (C. O'Morain).

https://doi.org/10.1016/j.dld.2018.10.001
1590-8658/

4. Increasing prevalence of digestive disorders

Digestive disorders, such as dyspepsia, gastro-oesophageal reflux disease (GORD), peptic ulcers, *Helicobacter pylori* and irritable bowel syndrome (IBS) are common and costly conditions that continue to exert a sizable socioeconomic burden across Europe. The incidence of the inflammatory bowel diseases (IBD), Crohn's disease and Ulcerative colitis, in particular has increased steadily in the last few decades. These diseases primarily affect young people, with a younger of age of onset being reported more recently. The incidence of childhood GI diseases is increasing in many countries and the impact of these conditions on children's social and psychological wellbeing is often over-looked [3]. There is a geographical variation in the incidence of IBD. It is higher in Northern compared to Southern Europe, and higher in the West than in the East of Europe. The geographical variations may be explained by lifestyle factors such as diet, exercise, smoking habits and antibiotic consumption [4]. Many people with IBD have frequent relapses, or continuous active disease, that often results in complications requiring hospitalisation and/or surgery. Treatment strategies vary widely across Europe, due to access and affordability, which results in variable outcomes for patients.

5. Gastro-Intestinal malignancy

Gastro-Intestinal malignancy is the leading cause of cancer death in Europe. It is the most common cancer in men, and the second most common in women. There were 684,000 cases of GI malignancy in Europe in 2012. This accounted for 30% of all new cancers among men, and 25% among women. Oesophageal and gastric cancer account for 6% of all cancers in men and 3% in women. It typically affects between the ages of 60–80 years old, with the most important risk factors being severe GORD, smoking and heavy alcohol consumption [5]. Gastric cancer also mainly affects older people with 80% of cases diagnosed between the ages of 60–80 years old. Gastric cancer is a cancer that could be prevented as the main risk factor is longstanding *Helicobacter pylori* (*H. pylori*) infection [6]. Cancer is never a single event. The acquisition of *H. pylori* in childhood is the initial event. In a minority of infected individuals their gastritis progresses to gastric atrophy, intestinal metaplasia, dysplasia and eventually gastric cancer [7]. This progression occurs over decades. There are co-factors such as diet and lifestyle and others that are not yet identified that favour progression. There is a geographical distribution of gastric cancer in that there is a high incidence in the Asia-pacific region of 30–40/100,000. The incidence in Europe varies, with a high incidence in the Baltic states of 27/100,000. The incidence in Italy is 11/100,000. A striking difference is the male to female ratio of 3:1. The risk of developing gastric cancer if the patient has gastric atrophy has an odds ratio of 90, which is higher than smoking in lung cancer (OR 12). There are population intervention studies in China showing that eradication of *H. pylori* prevents the development of gastric cancer, as long as the intervention is made before the development of intestinal metaplasia. *H. pylori* has been declared as a class 1 carcinogen by the World Health Organisation (WHO), with pilot studies recommended even in low-medium incidence countries, to evaluate *H. pylori* eradication strategies. In 2014 in Kyoto, Japan, a consensus meeting was held to evaluate the benefits of *H. pylori* eradication. The key recommendations were that *H. pylori* eradication should be advised for all patients infected, and to treat before pre-neoplastic changes occurred. To endorse the role of eradication for preventing gastric cancer, the WHO has supported a pilot study in Latvia, a relatively high incidence country, which is a multi-centre randomised study of *H. pylori* eradication and pepsinogen testing for the prevention of gastric cancer [8]. This is aimed at the population between the ages of 40–60.

6. Colorectal cancer

Colorectal cancer is the most common cancer in Europe, with 342,137 new cases recorded in the EU in 2012. It is higher amongst men, with 79/100,000 and 57/100,000 among females. Colorectal cancer usually arises from adenomatous polyps that can progress over 10–20 years to malignancy. The detection and removal of adenomatous polyps, at colonoscopy, gives an opportunity to prevent the progression to cancer [9]. Colonoscopy is the method of choice of detecting these pre-cancerous lesions. A study from Canada showed that Gastroenterologists perform high quality colonoscopies and achieve better key performance indicators including caecal intubation rate, adenoma detection rate (ADR), withdrawal time, which results in less interval cancers [10]. Screening protocols in Europe vary significantly from voluntary guidelines, recommended national guidelines, and opportunistic screening. The percentage of the population offered screening varies significantly across Europe, from 2.6% in Malta to 54.2% in Germany. Data is lacking for much of Europe. Participation rates in screening programmes also vary substantially from 20%-70%. There is a disparity of screening uptake even within states as witnessed in Italy, with 71.6% of Northern Italians compared to 7% of Southerners participating. There are no consensus guidelines on how best to manage high risk genetic groups. The demand for screening is predicted to rise with pressure to screen at a younger age and continue to advanced age. Much of Europe will be ill equipped to fund and resource more widespread screening programmes and the subsequent requisite increase in Endoscopy and cancer services.

The European Commission is concerned about equity in screening programmes for breast cervical and colorectal cancers. It has funded a programme to estimate health outcomes and cost-effectiveness, and to identify barriers to explain inequitable performance data. It aims to develop road maps towards improvements and to develop capacity for future self-evaluation of screening programmes through web based monitoring tools.

7. White paper on the burden of digestive diseases in Italy

The Italian society, through a joint effort of the Italian association of Hospital doctors, the Italian society of Endoscopy and the Italian society of Gastroenterology, produced a white paper on the burden of digestive diseases in Italy [11,12]. This research showed conclusively that Gastroenterology as a hospital specialty is under resourced. It found that 10% of all hospital discharges was due to a digestive disease. The Italian Ministry recommend a minimum of 3.4 hospital beds/1000 population. This would equate to 34/100,000 hospital beds dedicated to the digestive diseases, however currently there are only 7.3/100,000 allocated. Most hospital admissions due to a digestive disease are not admitted under the care of, nor managed primarily by a dedicated Gastroenterology team. This has a direct impact on outcome as measured by inpatient mortality of patients with emergency admissions, which was 1.7% if admitted under Gastroenterology, compared to 3.9% if admitted under general medical specialties. The mortality for urgent GI bleeding if admitted under Gastroenterology was 2% compared to 3.5% if admitted under a non-Gastroenterology specialty. The mean length of stay (LOS) for urgent admissions with digestive diseases was 8.6 compared to 8.9 for non-specialised care. LOS for GI bleed was 7 days compared to 8 in other units. This report clearly outlines the improvement in outcomes of digestive diseases when managed primarily by Gastroenterology rather than a general medical specialty.

8. Emerging issues

There are emerging issues for gastroenterologists to address. The obesity epidemic will constitute a major burden on our healthcare system for which we are ill prepared [13]. National and European strategies for prevention and early intervention are needed now more than ever, especially in children and adolescents. The rise in chronic digestive diseases is a consequence of our modern way of eating. As such, improving our dietary habits from a young age is an important step in mitigating this burden. Europe is the region with the highest level of alcohol consumption in the world [14]. As a result, Europe bears the highest burden of ill health and premature death linked directly to alcohol. Tackling the harmful use of alcohol must be a key priority for policy makers within the European Union with taxation, availability and marketing regulations all re-considered. The availability of counselling and treatment facilities must also be a key component.

9. Training

The European Board of Gastroenterology (EBG) of the Gastroenterology and Hepatology section of *L'Union Europeen Mono Specialistes* (UEMS) was created in an effort to harmonise training across Europe. Training duration currently varies between 4 and 9 years, and there is a lack of standardised training across the continent. The increasing complexity of the newest endoscopic therapeutic procedures presents both new opportunities and challenges for training. There is an increasing need for more specific training and dedicated therapeutic training pathways to respond to this demand. A recent UEG survey revealed that one third of all trainees in their final year of training felt under-trained in Endoscopy procedures, and one quarter under-trained in hepatology. Nurse specialists in IBD and Endoscopy are necessary to cope with increased volume of patients and demand of services. Multidisciplinary clinics are not common and only occur in large teaching hospitals. In the future, if change is not achieved in Europe, this will result in two tier medicine and eventually of a collapse of the public health system.

10. Conclusion

In summary, there is a notable increase in the incidence of GI diseases across Europe, with a resulting increased demand for limited resources. There are clear differences in outcomes for patients between Eastern and Western Europeans, and there is a worrying inequality in the provision of healthcare across the continent. Endoscopic training is becoming more complex and dedicated training pathways are required and should be harmonised across the continent. Digestive diseases are best managed by Gastroenterologists, with clear and demonstrated improvements in outcomes not only in terms of length of stay but also in terms of overall mortality.

Conflict of interest

None declared.

References

[1] Biomedical Alliance for Health Research in Europe https://www.biomedeurope.org.
[2] Farthing M, Roberts S, Samuel D, et al. Survey of digestive health across Europe: final report: part 1: the burden of gastrointestinal diseases and the organisation and delivery of gastroenterology services across Europe. United European Gastroenterol J 2014;2(December):539–43.
[3] Ruemmele FM, Veres G, Kolho KL, et al. Consensus guidelines of ECCO/ESPGHAN on the medical management of paediatric Crohn's disease. J Crohns Colitis 2014;8(October (10)):1179–207.
[4] Maaser C, Langholz E, Gordon H, et al. European Crohn's and Colitis organisation topical review on environmental factors in IBD. J Crohns Colitis 2017;11(August (8)):905–20.
[5] Sugano K, Tack J, Kuipers EJ, on behalf of faculty members of Kyoto Global Consensus Conference, et al. Kyoto global consensus report on *Helicobacter pylori* gastritis. Gut 2015;64:1353–67.
[6] Herrero R, Park JY, Forman D, et al. The fight against gastric cancer — the IARC working group report. Best Pract Res Clin Gastroenterol 2014;28(6). ISSN; 1532–1916.
[7] Malfertheiner P, Megraud F, O'Morain CA, on behalf of the European Helicobacter Microbiota Study Group Consensus panel, et al. Management of *Helicobacter pylori* infection—the maastricht V/Florence consensus report. Gut 2017;66:6–30.
[8] Leja M, Park JY, Murillo R, et al. Multicentric randomised study of *Helicobacter pylori* eradication and pepsinogen testing for prevention of gastric cancer mortality: the GISTAR study. BMJ Open 2017;7:e016999, http://dx.doi.org/10.1136/bmjopen-2017-016999.
[9] Schreuders EH, Ruco A, Rabeneck L, et al. Colorectal cancer screening: a global overview of existing programmes. Gut 2015;64:1637–49.
[10] Ko CW, Dominitz D, Green P, et al. Specialty differences in polyp detection, removal, and biopsy during colonoscopy. Am J Med 2016;123(6):528–35.
[11] Buscarini E, Conte D, Cannizzaro R, et al. White paper of Italian gastroenterology: delivery of services for digestive diseases in Italy: weaknesses and strengths. Dig Liv Dis 2014;46(7):579–89.
[12] Balzano A, Carle F, Tamburini C, et al. Hospital admissions for digestive diseases: gastroenterology units offer a more effective and efficient care. Dig Liver Dis 2018;(June), pii: S1590-8658(18)30802–8.
[13] Eurostat. 2014. Overweight and obesity – BMI statistics. www.ec.europa.eu/eurostat/statistics-explained/index.php/Overweight_and_obesity_-_BMI_statistics.
[14] World Health Organisation Europe 2017. Alcohol Use: Data and Statistics. http://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/data-and-statistics.